

(a) a truncated glial cell line-derived neurotrophic factor (GDNF) protein product consisting of an amino acid sequence

X-(Cys⁴¹-Cys¹³³)-Y

wherein

(Cys⁴¹-Cys¹³³) consists of Cys⁴¹ through Cys¹³³ of SEQ ID NO:2;

Y represents the carboxy terminal group of Cys¹³³, a carboxy-terminus amino acid residue of Ile¹³⁴, or a substituted amino acid residue, and

X represents a methionylated or nonmethionylated amine group of Cys⁴¹ or amino-terminus amino acid residue(s) selected from the group:

<u>B¹</u> <u>Cont</u>	<u>C</u> <u>G</u> <u>RG</u> <u>NRG</u> <u>KNRG (SEQ ID NO:3)</u> <u>GKNRG (SEQ ID NO:4)</u> <u>RGKNRG (SEQ ID NO:5)</u> <u>ORGKNRG (SEQ ID NO:6)</u> <u>GORGKNRG (SEQ ID NO:7)</u> <u>RGORGKNRG (SEQ ID NO:8)</u> <u>RRGORGKNRG (SEQ ID NO:9)</u> <u>G RRGORGKNRG (SEQ ID NO:10)</u> <u>KG RRGORGKNRG (SEQ ID NO:11)</u> <u>GKG RRGORGKNRG (SEQ ID NO:12)</u> <u>RGKG RRGORGKNRG (SEQ ID NO:13)</u> <u>SRGKG RRGORGKNRG (SEQ ID NO:14)</u> <u>NSRGKG RRGORGKNRG (SEQ ID NO:15)</u> <u>ENSRGKG RRGORGKNRG (SEQ ID NO:16)</u> <u>PENSRGKG RRGORGKNRG (SEQ ID NO:17)</u> <u>NPENSRGKG RRGORGKNRG (SEQ ID NO:18)</u> <u>ANPENSRGKG RRGORGKNRG (SEQ ID NO:19)</u> <u>A ANPENSRGKG RRGORGKNRG (SEQ ID NO:20)</u> <u>AA ANPENSRGKG RRGORGKNRG (SEQ ID NO:21)</u> <u>AAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:22)</u> <u>AAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:23)</u> <u>ROAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:24)</u>
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NRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:25)
RNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:26)
ERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:27)
RERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:28)
RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:29)
P RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:30)
LP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:31)
VLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:32)
AVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:33)
MAVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:34)
OMAVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:35)
KOMAVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:36)
DKOMAVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:37) and
PDKOMAVLP RRERNRQAAA ANPENSRGKG RRGORGKNRG (SEQ ID NO:38)

or a substitution or deletion variant of X, wherein said variant is in excess of 70% identical to an amino acid sequence of X as set forth above when four gaps in a length of 100 amino acids may be introduced to assist in that alignment, and

(b) a pharmaceutically acceptable vehicle.

Please add the following claims:

-- 45. (Newly added) A method for affecting the survival or function of neurons comprising administering a pharmaceutical composition comprising:

(a) a truncated glial cell line-derived neurotrophic factor (GDNF) protein product consisting of an amino acid sequence

wherein

(Cys⁴¹-Cys¹³³) consists of Cys⁴¹ through Cys¹³³ of SEQ ID NO:2;

Y represents the carboxy terminal group of Cys¹³³, a carboxy-terminus amino acid residue of Ile¹³⁴, or a substituted amino acid residue, and

X represents a methionylated or nonmethionylated amine group of Cys⁴¹ or amino-terminus amino acid residue(s) selected from the group:

G
RG
NRG
KNRG (SEQ ID NO:3)
GKNRG (SEQ ID NO:4)
RGKNRG (SEQ ID NO:5)
QRGKNRG (SEQ ID NO:6)
GQRGKNRG (SEQ ID NO:7)
RGQRGKNRG (SEQ ID NO:8)
RRGQRGKNRG (SEQ ID NO:9)

G RRGQRGKNRG (SEQ ID NO:10)
KG RRGQRGKNRG (SEQ ID NO:11)
GKG RRGQRGKNRG (SEQ ID NO:12)
RGKG RRGQRGKNRG (SEQ ID NO:13)
SRGKG RRGQRGKNRG (SEQ ID NO:14)
NSRGKG RRGQRGKNRG (SEQ ID NO:15)
ENSRGKG RRGQRGKNRG (SEQ ID NO:16)
PENSRGKG RRGQRGKNRG (SEQ ID NO:17)
NPENSRGKG RRGQRGKNRG (SEQ ID NO:18)
ANPENSRGKG RRGQRGKNRG (SEQ ID NO:19)

A ANPENSRGKG RRGQRGKNRG (SEQ ID NO:20)
AA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:21)
AAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:22)
QAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:23)
RQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:24)
NRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:25)
RNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:26)
ERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:27)
RERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:28)
RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:29)

P RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:30)
LP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:31)
VLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:32)
AVLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:33)
MAVLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:34)
QMAVLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:35)
KQMAVLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:36)

DKQMAVLP RRERNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:37) and

B2
CONT

Sub C
cont

PDKQMAVLP RRERRNRQAAA ANPENSRGKG RRGQRGKNRG (SEQ ID NO:38); and
(b) a pharmaceutically acceptable vehicle.

46. A method according to Claim 30 or 45, wherein X is selected from the group consisting of SEQ ID NO: 3, 7, 8, 14, 17 and 18

47. A method according to Claim 30 or 45, wherein X is G, RG or NRG.

48. A method according to Claim 30 or 45, wherein said GDNF protein product has the amino acid sequence of SEQ ID NO:42.

49. A method according to Claim 30 or 45, wherein said GDNF protein product has the amino acid sequence of SEQ ID NO:44.

50. A method according to Claim 30 or 45, wherein said GDNF protein product has the amino acid sequence of SEQ ID NO:46. --

Respectfully submitted,



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